



Case report

A Case report about clinical outcome of a 37-week pregnant woman with COVID-19 in Bangladesh

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ABSTRACT

Background: A highly pathogenic Coronavirus named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) emerged in December 2019 in Wuhan, China after SARS-CoV and Middle East Respiratory Syndrome coronavirus (MERS-CoV). It spreads rapidly around the world. Pregnant women are at risk for COVID-19 which is more likely to have complications and even progress to severe illness. There is not enough data to determine the effect of COVID-19 infection on the fetus. **Case report:** We report a case of 37-week pregnant woman with COVID-19 infection in Bangladesh who delivered an infant with no evidence of COVID-19 by RT-PCR. Careful transmission precautions with the infant, including contact, droplet, and airborne precautions helps us to deliver a negative baby. **Conclusion:** This case provides an initial view of the outcome associated with pregnancy-related COVID-19 and several effective strategies for managing pregnant women with COVID-19. As SARS-CoV-2 may increase health risks to both mothers and infants during pregnancy, intensive attention should be paid to pregnant patients.

Introduction

Severe Acute Respiratory Syndrome Coronavirus 2 is a newly documented illness that has emerged in Wuhan (Hubei province), spreading to other provinces in China and around the world since the beginning of the 21st century [1]. As of 30 June 2020, over 10268786 confirmed cases of the 2019 novel Coronavirus infection (COVID-19) around world have been reported and 504345 people have died [2]. The modes of transmission are from person-to-person with no effective treatments or vaccines until now [3].

Besides the current outbreak of SARS-CoV-2, the world has experienced the devastating effect of two Corona virus outbreaks in the past two decades;

Severe Acute Respiratory Syndrome coronavirus (SARS CoV) in 2002-2003 and Middle East Respiratory Syndrome coronavirus (MERS CoV) in 2012 [4]. Severe Acute Respiratory Syndrome during pregnancy is associated with high maternal morbidity and mortality. There were high incidences of spontaneous miscarriage, preterm delivery, and Intra uterine growth restriction (IUGR) [5].

According to previous studies, pregnant women are at high risk of developing viral infection, such as influenza-A, H1N1, SARS-CoV, MERS-CoV, and Ebola virus, and appear to have worse clinical outcomes, including maternal mortality, stillbirth, spontaneous abortion, and preterm delivery,

compared with non-pregnant women [3,5-7]. However, there are only limited data about the clinical features of COVID-19 during pregnancy.

In this study, we report a case of a 37-week pregnant woman with COVID-19 who gave birth to an infant with no evidence of COVID-19.

Case Report

A 26-year-old pregnant woman third gravida about 37 weeks gestation (G3P2+0), lives in Mirpur, Dhaka. Her family has no confirmed or suspected cases of COVID-19, but she went for ultrasonography of pregnancy profile and gynecologist one week before. That may be the cause of her SARS-CoV-2 infection. Another fact is around 1400 people had been diagnosed in the same community where she lives in [8].

She had a history of previous Cesarean section (C/S) with gestational diabetes mellitus (GDM) with no history of hypertension or heart disease. She had a history of intrauterine death on 7th months of pregnancy on 2017. She is not allergic to any drugs.

As the patient had complained of loose motion and anosmia for last 4 days, she did investigation (home collection) and tested positive for SARS-CoV-2 on 10 May 2020. After that, she was in home isolation. Blood tests revealed lymphopenia ($0.97 \times 10^9/L$, normal: $1.1-3.2 \times 10^9/L$), neutrophilia ($9.97 \times 10^9/L$, normal: $1.8-6.3 \times 10^9/L$), and elevated CRP level (normal 0-10 mg/L and hs CRP <3 mg/L). On 14 May 2020 she was admitted into Mugda Medical College Hospital with severe lower abdominal pain with vaginal watery discharge for 8 hours before admission.

On admission, her body temperature was 37.8°C and her blood pressure was 130/80 mm Hg, with respiratory rate of 20 breaths per minute, pulse of 98 beats per minute. She had no cough or sputum. Fetal heart rate (FHR) was 150 bpm. Emergency C/S was performed with an estimated blood loss of 200 mL; all personnel involved wore protective gear, including gown, a N95 mask, eye protection, and gloves.

Meconium-stained liquor was noted intra-operatively. A baby boy was delivered, weighted 2900 g. Apgar scores 8/10. The infant had no moaning or spitting after birth. The skin was ruddy, and the crying was loud. The mother had been wearing a surgical mask throughout the operation. The infant was transferred to neonatology department 10 minutes after birth for close observation and the

mother was transferred to the isolation ward after surgery. After OT, mother became hypoglycemic. She was treated accordingly. Random blood sugar of the baby was 4.3 mmol/dl after OT. Baby was breast fed after few hours of surgery with the mother wearing a mask and practicing hand hygiene according to World Health Organization and Centers for Disease Control and Prevention guidelines [9,10]. The mother was well and afebrile during the immediate post-operative period. She had no cough or any other discomfort such as diarrhea, nausea and vomiting. Her vital signs were stable with blood oxygen saturation of 99%.

For COVID-19 test, nasal and throat swabs of the baby were taken following day after OT. Another sample was taken 5 days after. Both reports were negative. Mother became negative 12 days after giving the first sample. Another sample was taken 24 hours apart. Both were negative. Cord blood or placenta specimens and mother's breast milk sample were not tested for SARS-CoV-2. This patient and her baby were discharged on 28 May 2020. Now both are well.

Discussion

During the COVID-19 outbreak, worse outcomes among pregnant women infected with SARS-CoV-2 is a major concern for obstetricians [11].

As physiological and immunological changes occur in pregnancy resulting in a shift from cell-mediated to humoral immunity, so severe viral pneumonia may occur. High incidence of spontaneous miscarriage, preterm delivery, and IUGR was observed in SARS with pregnancy [12].

Several studies [3,5-7] revealed that due to changes in immune responses, pregnant women with different viral respiratory illness were at high risk of developing obstetric complications and adverse outcomes compared with non-pregnant women [3]. Although there have been no clinical or serological reports of SARS or MERS in neonatal infections in previous studies, but evidence of vertical mother to child transmission in H1N1 and respiratory syncytial virus (RSV) have been reported [12].

Recently, a high rate of pregnancy complications was reported in a case series where 30% cases undergoing emergency C/S because of fetal distress, 10% for premature rupture of the membrane, and 10% was stillbirth, although the severity of COVID-19 in most of these patients was classified as mild to moderate, only one developed

severe pneumonia [13]. Another study enrolled 16 pregnant women with COVID-19 and 45 pregnant women without infection in their third trimester. The results did not indicate any increased risk of perinatal complications in the SARS-CoV-2 infected women, including the occurrence of severe pre-eclampsia, premature rupture of the membrane, fetal distress, meconium-stained amniotic fluid, premature delivery, neonatal asphyxia, and postpartum hemorrhage [14]. This suggests that the effects of COVID-19 in pregnancy warrant further studies.

"Expert Recommendations for New Coronavirus Infections in Pregnancy and Puerperium" [15] proposed that the new Coronavirus infection is not an indication for termination of pregnancy. Termination of pregnancy depends on the disease status, gestational age and fetus of the pregnant woman; whether the choice of delivery method is safer by vaginal delivery or C/S is currently inconclusive [16,17].

In this case, we report that a mother of 37-week pregnancy with COVID-19 gave birth to a healthy infant. Our case ended up with an uneventful postpartum and neonatal course. The RT-PCR tests were all negative, suggesting that the infant was unaffected by COVID-19, and all healthcare workers taking care of him remained asymptomatic. As our patient was infected at the later stage of pregnancy, so we did not assess the probability of vertical transmission during the early trimesters.

Several reasons might have contributed to the uneventful perinatal course. Our medical center was one of the designated hospital for COVID-19 in Bangladesh, and all of the healthcare workers received training for strict isolation and protection measures, such as the use of protective equipment, hand hygiene, waste management, environmental cleaning and sterilization of medical equipment, and followed the correct procedures during medical practice. The patient in our case was ideally cared for by a multidisciplinary medical team, including obstetrics, pediatrics, and anesthesia. Timely and effective consultations were obtained to discuss her case. Lastly, careful transmission precautions with the infant, including contact, droplet, and airborne precautions, seem to be of great significance.

Conclusion

Severe Acute Respiratory Syndrome Coronavirus 2 may increase health risks to both mothers and infants during pregnancy. In our case, the outcome was good. Efforts should be taken to

reduce the infection rate of SARS-CoV-2 both in pregnant and perinatal period. Further studies are needed for observing maternal and birth outcome of pregnancy and also status of vertical transmission in different trimesters.

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